

NORTH CAROLINA MATHEMATICS

Grade 1 | Geometry

Fair shares, whole shapes



NC.1.G.3

Teaching scripts • construction and reasoning • reusable 60-item bank • worked keys • observation records

Current NC standards for 2026-27 and 2027-28. This packet does not use the newly adopted standards scheduled for 2028-29.

Short sessions across days. Print selected student pages. Read-aloud, AAC and child-directed construction supports are welcomed; preserve the learner's mathematical decisions.

Free sample | Contents

NC.1.G.3 | First Grade mathematics

This sample contains 23 complete selected pages from the 98-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-22, 79

Representative activities

M01: sample PDF page(s) 20; original page(s) 19

M02: sample PDF page(s) 22; original page(s) 21

O01: sample PDF page(s) 21; original page(s) 20

O02: sample PDF page(s) 23; original page(s) 22

Selected teacher prompts and keys: original page(s) 79

Using this sample

Read the preparation and access guidance before using a selected activity.
Keep teacher keys and private preparation pages separate from student copies.
Use the original resource contents to see the scope of the complete packet.

Complete paid download

The complete resource includes the full PDF task bank and teaching materials.

CONTENTS

Choose the next useful page

Teacher guide: exact standard, targets, preparation, short-session sequence and worked model. Seven section scripts identify selected items and the complete bank ranges. Teacher anchors and actual materials follow.

Student bank: one multiple-choice check and one open/performance task per number, each on its own page. Every open task includes room to draw, record or document a physical construction. Use a table or mat when a model is too large for the page.

Teacher-only keys follow all student pages. Keys include exact choice letter, answer and explanation; open keys give sample constructions, valid alternatives and evidence. Assessment pages give a local rubric, blank observation form, coverage log and extension.

Start small

Choose a few items for one session; do not assign all 60 at once. Use the page footers, item IDs and section labels to select/copy pages. Completed anchors are for instruction, never hidden in independent work.

Target key

- A | Partition circles and rectangles into two and four equal shares.
- B | Use halves, fourths, half of and fourth of to describe equal shares.
- C | Describe a whole as two of, or four of, its equal shares.
- D | Explain why more equal shares of the same whole are smaller.

TEACHER GUIDE

Standard and evidence

Exact North Carolina standard

NC.1.G.3 Partition circles and rectangles into two and four equal shares.

- Describe the shares as halves and fourths, as half of and fourth of.
- Describe the whole as two of, or four of the shares.
- Explain that decomposing into more equal shares creates smaller shares.

Learning targets

A | Partition circles and rectangles into two and four equal shares.

B | Use halves, fourths, half of and fourth of to describe equal shares.

C | Describe a whole as two of, or four of, its equal shares.

D | Explain why more equal shares of the same whole are smaller.

Essential question

How do equal shares help us describe parts and wholes?

Evidence to collect

Observe child-created partitions of circles and rectangles into both two and four equal shares. Collect equality explanation, exact share language, reconstruction of whole and same-whole half/fourth comparison. Recognition choices alone cannot establish these performances.

TEACHER GUIDE

Prepare for learning

Prerequisites

Recognize circles and rectangles; count 2 and 4; compare amounts by matching and covering. Do not require fraction symbols, numerical area calculation or perfectly drawn motor output.

Materials and safety

Blank circle/rectangle masters, pencil, crayons, blank paper, mat and adult scissors. Adults cut outlines or child-marked partitions; children may fold or direct an adult to draw/cut. For assessed tasks do not supply a precrease, center dot or line that gives the partition. Keep same-size wholes for comparisons. Print at one consistent scale; exact inches are unnecessary.

Language

Equal shares; halves; fourths; half of; fourth of; whole. The whole is two of the equal half-shares, or four of the equal fourth-shares. Equal means the same amount of the shape, not simply the same number of parts.

Access without giving the answer

Read directions and all choices neutrally, repeat on request, allow pointing, sign, AAC, oral explanation or dictated recording. Offer larger materials, tactile boundaries and stable mats. An adult may follow the learner's exact construction or cutting directions for motor access; record who made each geometric decision. Do not score handwriting, accent or spelling.

Record neutral access supports separately from answer-supplying cues (naming the piece, locating the center, fixing a corner, showing the partition). Obtain a fresh attempt without the mathematical cue before treating evidence as independent.

TEACHER GUIDE

Short sessions, full coverage

Use 10-20 minute sessions over several days. The 60-item bank is reusable, not a single test. Choose 1-2 items per session. Continue until each required construction/partition and explanation has been observed; do not infer full coverage from a few chosen exit tasks.

Warm-up: M01-M04 and O01-O04 (4 choices + 4 open tasks). O01-O04; M01.

I Do: M05-M08 and O05-O08 (4 choices + 4 open tasks). O05-O08; M05.

We Do: M09-M13 and O09-O13 (5 choices + 5 open tasks). O09-O13; M11.

Collaborative practice: M14-M18 and O14-O18 (5 choices + 5 open tasks). O14-O18; M14.

Independent practice: M19-M23 and O19-O23 (5 choices + 5 open tasks). O19-O23; M19.

Small-group reteach: M24-M27 and O24-O27 (4 choices + 4 open tasks). O24-O27; M24.

Exit ticket: M28-M30 and O28-O30 (3 choices + 3 open tasks). O28-O30; M28.

Practical sequence

Days 1-2: halves of both shapes and equal/unequal contrasts. Days 3-4: fourths of both shapes and language/reconstruction. Days 5-6: same-whole comparisons and varied partitions. Days 7-8: independent evidence, reteach and conferences.

Timing is a flexible teaching suggestion, never a speed criterion. M items are recognition checks; O items supply the required authentic performances.

TEACHER GUIDE

Worked model and response

Say and demonstrate

Use a blank rectangle. Fold it in half matching opposite edges, unfold, and trace the crease. Say: These shares cover the same amount. Each is half of the rectangle. The whole is two of these shares. Fold each half equally again; unfold to four equal strips. Say: These shares are fourths; each is fourth of the rectangle. The whole is four of these shares. Two fourths cover one half, so with the same whole, more equal shares makes each share smaller.

Listen for

Each share half of/fourth of; whole two of/four of the shares.

Respond to a misconception

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Fresh transfer

After a folded rectangle model, offer an uncreased circle. Ask for equal halves and proof. Later offer fresh same-size circles for half/fourth comparison.

TEACHER SCRIPT | WARM-UP

Warm-up in action

Purpose and selected tasks

O01-O04; M01. Bank range: M01-M04; O01-O04.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Offer blank shapes. Ask: Make two people get the same amount. Then ask for four shares on a fresh whole. Listen before modeling and save baseline work.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Two/four equal areas, not just two/four parts; both shape types.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

TEACHER SCRIPT | I DO

I Do in action

Purpose and selected tasks

O05-O08; M05. Bank range: M05-M08; O05-O08.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Model folding rectangle halves and fourths using the script. Repeat with a circle, matching curved boundaries and folding again through center. Use exact share and whole language.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Each share half of/fourth of; whole two of/four of the shares.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

TEACHER SCRIPT | WE DO

We Do in action

Purpose and selected tasks

O09-O13; M11. Bank range: M09-M13; O09-O13.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Explore diagonal rectangle halves and strips versus grid fourths. Cut and overlay to justify. Compare halves/fourths of identical wholes, then repair off-center circle split.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Equal area can be proved with matching, not only visual guessing.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

TEACHER SCRIPT | COLLABORATIVE PRACTICE

Collaborative practice in action

Purpose and selected tasks

O14-O18; M14. Bank range: M14-M18; O14-O18.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Partners partition and explain, then exchange same-size wholes. Each learner describes one share and reconstructs the whole. Pair two fourths to cover a half.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Individual partition, correct language, whole preserved and smaller-share explanation.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

TEACHER SCRIPT | INDEPENDENT PRACTICE

Independent practice in action

Purpose and selected tasks

O19-O23; M19. Bank range: M19-M23; O19-O23.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Use fresh blank shapes, no center marks. Read prompt without pointing to cut location. Ask: How can you show the shares are equal? Collect same-whole comparison.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Circle/rectangle equality and all four targets independently evidenced.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

TEACHER SCRIPT | SMALL-GROUP RETEACH

Small-group reteach in action

Purpose and selected tasks

O24-O27; M24. Bank range: M24-M27; O24-O27.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Contrast unequal parts with equal halves using overlay. Model a fold only during teaching, then give fresh uncreased paper. Invite a four-unequal-parts counterexample.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Count alone is insufficient; record any supplied crease/line as mathematical cue.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

TEACHER SCRIPT | EXIT TICKET

Exit ticket in action

Purpose and selected tasks

O28-O30; M28. Bank range: M28-M30; O28-O30.

0-2 minutes | Invite

Gather the specified safe materials. State the task in everyday language and ask the learner to predict a useful first move. Use the essential question to focus attention.

2-8 minutes | Teach, build, explain

Across short individual conferences, child partitions circle into halves, rectangle into fourths and compares same-size circle shares. Fill missing circle-fourths or rectangle-halves evidence from earlier tasks.

8-12 minutes | Check and respond

Ask: How can you show that? Listen without completing the response. Correct creation, equality, half of/fourth of, whole language, and smaller-share explanation.

If support is needed

If any two parts are called halves, compare an off-center partition with a center partition by overlaying cut pieces. If fourths must be strips, compare a 2 by 2 grid with four strips. If a fourth of a larger whole is called always smaller than a half of any whole, reset to same-size wholes.

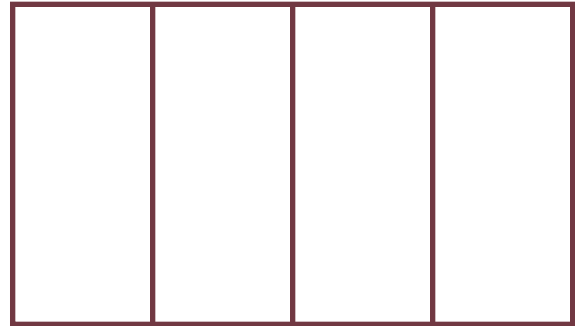
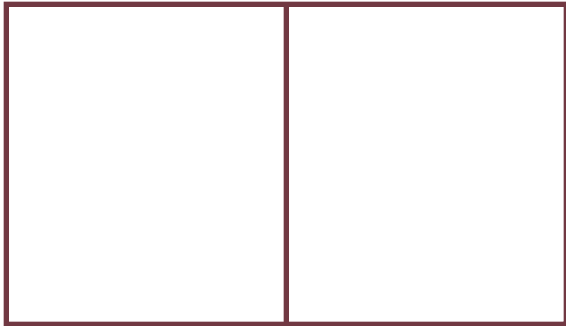
Early finisher and record

Find a different equal partition of the same whole and demonstrate equality by covering or folding. Explain why number of parts alone is not proof. Record item, actual action, exact explanation, support and next step. Stop or split the session when attention or motor demands require it.

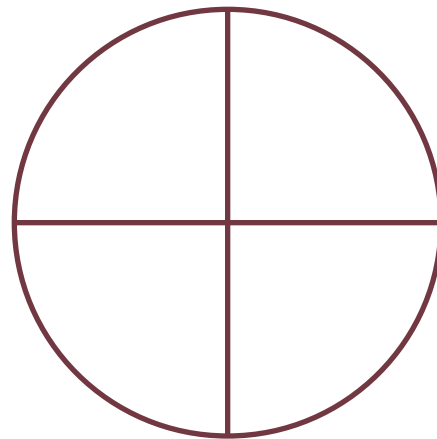
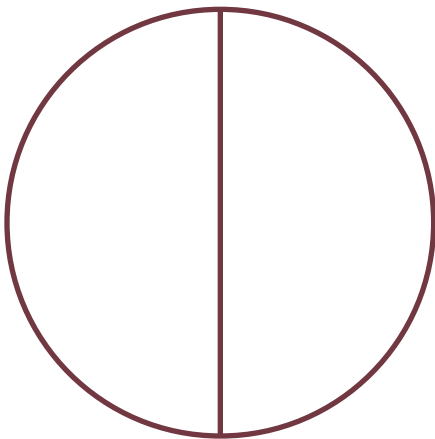
TEACHER ANCHOR | WORKED EXAMPLE

Equal shares and the whole

Use these completed examples only for teaching. Independent tasks use fresh blank outlines. Same-size wholes are shown in each comparison. The lines mark equal-area regions.



Each share on the left is half of the rectangle. Each share on the right is fourth of the rectangle. The whole is two of its halves, or four of its fourths. Two fourths cover one half.



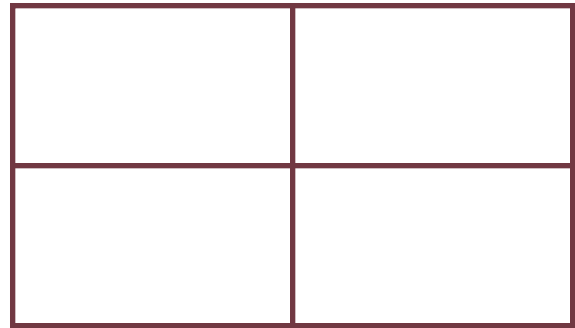
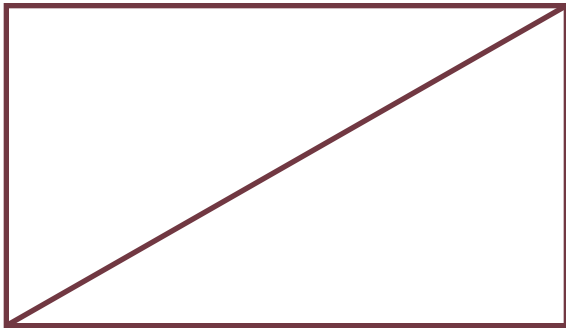
Halves and fourths are equal shares. More equal shares of the same whole create smaller shares. The fourths above are smaller than the halves, although the two whole circles are the same size.

TEACHER PROOF AND ALTERNATIVES

Equal is about amount

Fold/overlay proof: a diameter splits a circle into matching semicircles; perpendicular diameters split it into matching quarter-circles. A center line splits a rectangle into matching rectangles. A diagonal splits a rectangle into matching triangles: turn one triangle to cover the other. Matching regions have equal area.

Four equal-width strips and a 2 by 2 grid both give fourths of a rectangle. Their pieces can look different yet contain equal amounts. Do not teach that all equal-area shares must have identical shapes. For Grade 1, folding and matching are accessible evidence; area formulas are teacher checks, not learner prerequisites.



Diagonal halves (left) and grid fourths (right) are valid. The number of drawn lines is not the number of shares. One diagonal makes two shares; two crossing center lines make four.

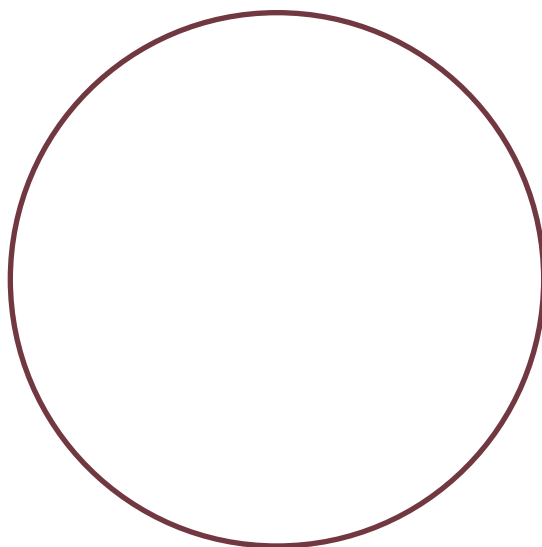
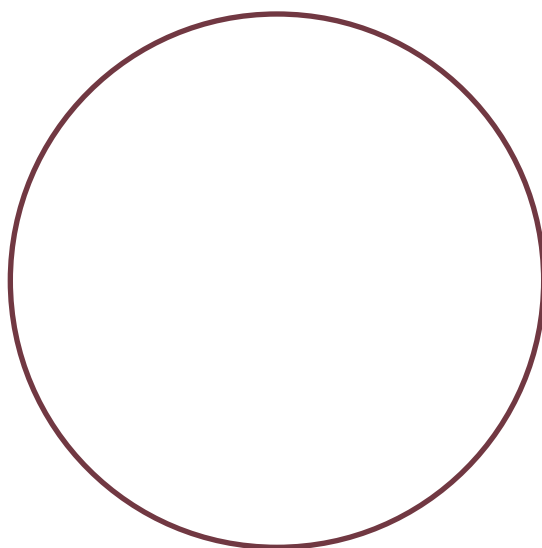
A fair nonexample

An off-center line makes two unequal parts. Do not call them halves. Ask the learner to explain the unequal amounts, then repartition a fresh whole. An approximate hand-drawn center line can count if the intended equality and proof are clear; do not confuse fine-motor imprecision with a mathematical error.

STUDENT MATERIALS | BLANK MASTER

Fresh circle wholes

Use fresh copies for folds or cuts. Adults cut the outer boundary. Do not add a center mark or crease before an independent task.



STUDENT MATERIALS | BLANK MASTER

Fresh rectangle wholes

Use fresh copies for folds or cuts. Adults cut the outer boundary. Do not add a center mark or crease before an independent task.



STUDENT ORGANIZER

Show, tell and check

Make equal shares. Draw or show your proof. Tell about one share and the whole.



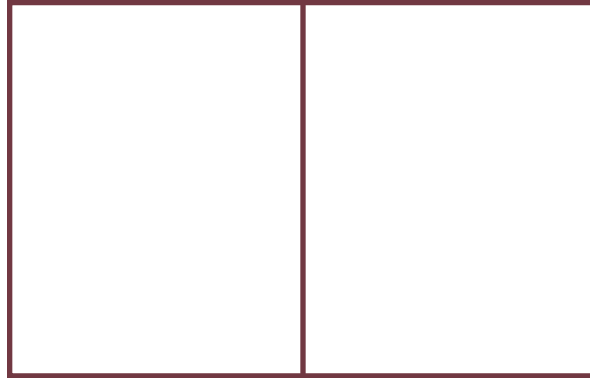
I noticed: _____

My explanation: _____

STUDENT | WARM-UP

M01 | Choose and explain

Name: _____ Date: _____

A rectangle has 2 equal shares. What are the shares called?

- A. Halves
- B. Fourths
- C. Thirds
- D. Wholes

Tell or show how you know.

STUDENT | WARM-UP

001 | Make and explain

Name: _____ Date: _____

Split the rectangle into 2 equal shares. Explain how you know they are equal.



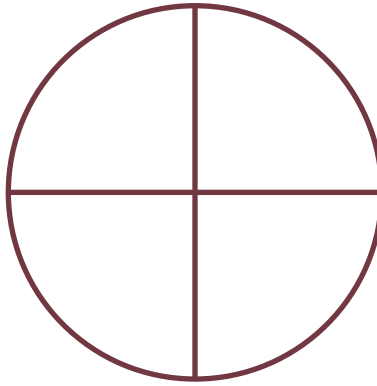
Tell or show how you know. An adult may record your words.

My explanation: _____

STUDENT | WARM-UP

M02 | Choose and explain

Name: _____ Date: _____

A circle has 4 equal shares. What are the shares called?

- A. Fourths
- B. Halves
- C. Thirds
- D. Wholes

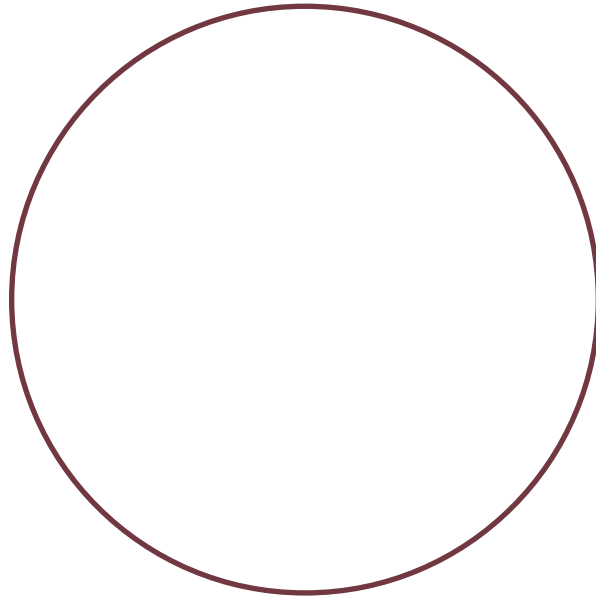
Tell or show how you know.

STUDENT | WARM-UP

002 | Make and explain

Name: _____ Date: _____

Split the circle into 2 equal shares. Explain how you know.



Tell or show how you know. An adult may record your words.

My explanation: _____

TEACHER-ONLY WORKED KEYS

Items 01-02

M01 | A - Halves

Target B. Two equal shares are halves.

Distractor check: Other choices change a required property, confuse the shape/share/component, or use an irrelevant feature. Ask the learner to demonstrate the deciding property; never infer construction from a correct choice.

001 | Sample / accepted evidence

Target A. Example: vertical or horizontal center line; resulting rectangles match by folding/overlay. A diagonal also works. Two equal areas required.

Record actual work and explanation. Accept mathematically equivalent constructions or wording with the same meaning. Separate neutral access from supplied mathematical cues.

M02 | A - Fourths

Target B. Four equal shares are fourths.

Distractor check: Other choices change a required property, confuse the shape/share/component, or use an irrelevant feature. Ask the learner to demonstrate the deciding property; never infer construction from a correct choice.

002 | Sample / accepted evidence

Target A. Draw a diameter through the center, or fold so the boundary matches. Two semicircles match by folding/overlay. Off-center chord is not equal.

Record actual work and explanation. Accept mathematically equivalent constructions or wording with the same meaning. Separate neutral access from supplied mathematical cues.